

C L A I M S

Sub 264
1. A gas compressor switchable between load and idling operations, comprising

5 a compression chamber (20),
a suction chamber (8) connected via at least one suction valve (4,21; 4,22) to said compression chamber,

an outlet chamber (15) connected via at least one outlet valve (17, 18) to said compression chamber, and

10 an admixture chamber (7) connected during said idling operation to said compression chamber (20) via an admixture valve.

2. The gas compressor of Claim 1, further comprising a closing valve (18,22; 18,30) for locking the connection between said
15 compression chamber and said outlet chamber during said idling operation.

3. The gas compressor of Claim 2, wherein said compression chamber (20) and said admixture chamber (7,20,35) are subjected to
20 a predetermined pressure during said idling operation.

(4.) The gas compressor of Claim 1, further comprising an overpressure valve (9) for limiting the pressure in the compression chamber (20) and the admixture chamber (7,20,35).

5. The gas compressor of Claim 1, further comprising an extra suction valve (19, 21; 19, 22) for connecting said compression chamber (20) to an overpressure free relief chamber.

6. The gas compressor of Claim 5, wherein said additional suction valve is located between said admixture chamber and said relief chamber.

7. The gas compressor of Claim 1 wherein said suction chamber (8) is surrounded by said admixture chamber.

8. The gas compressor of Claim 7, wherein said suction chamber comprises an insert (36).

9. The gas compressor of claim 1, wherein said compression chamber (20) is a first compression chamber, said suction chamber (8) is a first suction chamber, said suction valve (4, 21; 4, 22) is a first suction valve, said outlet chamber (15) is a first outlet chamber, said outlet valve (17, 18) is a first outlet valve, said admixture valve (10, 21; 10, 22) is a first admixture valve and said gas compressor further comprises

at least one additional compression chamber (20'), the size of which changes in opposition to the size of the first compression chamber (20),

at least one additional suction chamber (8) connected to said additional compression chamber (20') via at least one suction valve (4, 31),

an additional outlet chamber connected via at least one additional outlet valve (17,18) to said additional compression chamber (20'),

a channel (35) connecting said first compression chamber (20) to said additional compression chamber (20'),

said channel (35) and one of said compression chambers (20; 20') forming an admixture chamber associated with the other compression chamber (20; 20'),

said first admixture valve (10,21; 10,22) connecting said first compression chamber (20) with said channel (35), and

at least one additional admixture valve (10,30) connecting said additional compression chamber (20') with said channel (35) during said idling operation.

10. The gas compressor of Claim 9, wherein said first and additional suction chambers are combined.

¹³
11. The gas compressor of claim 9, wherein said first and additional outlet chambers are combined.

Page 7
12. The gas compressor of Claim 9, further comprising at least two closing valves (18, 22; 18, 30) for locking the connections between said compression chambers (20, 20') and said outlet chambers during said idling operation.

5

13. The gas chamber of Claim 12, wherein said compression chambers (20; 20') and said channel are subjected to a predetermined pressure during said idling operation.

10 14. The gas compressor of Claim 9, further comprising an overpressure valve (9) for limiting pressure in said compression chambers (20, 20') and the channel (35).

15 15. The gas compressor of Claim 9, further comprising at least one extra suction valve (19, 20; 19, 22) for connecting said compression chambers (20, 20') to an overpressure relief chamber.

20 16. The gas compressor of Claim 15, wherein said extra suction valve (19, 21; 19, 22) is located between said channel and said relief chamber.

17. The gas compressor of Claim 10, wherein said combined suction chamber (8) is surrounded by said channel (35).

25 18. The gas compressor of Claim 17, wherein said combined suction chamber (8) is formed by an insert (36).